

MEMO TO: City Council

FROM: Rosemarie Ives, Mayor

DATE: October 2, 2007

SUBJECT: **APPROVAL OF CONSULTANT AGREEMENT FOR GROUNDWATER MONITORING NETWORK ENHANCEMENT PROJECT**

**I. RECOMMENDED ACTION**

Move to approve the Consultant Agreement with GeoEngineers, the most qualified firm to provide engineering services for the Groundwater Monitoring Network Enhancement project, in the amount of \$331,409 (including contingencies), and authorize the Mayor to sign the agreement.

**II. DEPARTMENT CONTACT PERSONS**

Bill Campbell, Director of Public Works	556-2733
Jon Spangler, Natural Resources Manager	556-2823
Tom Barry, Engineering Section Manager	556-2870
Elaine Dilley, Groundwater Technician	556-2757

**III. DESCRIPTION**

A. Background

The City of Redmond operates five shallow groundwater supply wells that deliver between 3.5 and 5 million gallons of water per day, supplying approximately 40% of Redmond's drinking water. These five wells, which draw from the shallow alluvial aquifer, are located in the heart of Redmond's downtown and industrial areas and are highly susceptible to contamination due to the local geology and proximity to potential pollution sources. In October 2003, the City Council adopted a Wellhead Protection Ordinance to meet federal, state, and regional requirements for the protection of the Critical Aquifer Recharge Area (CARA) and the City's drinking water supply. An important requirement of the Ordinance is the establishment of a city-wide groundwater monitoring program to detect the presence of contaminants before they impact a water supply well.

The City maintains several groundwater monitoring wells within the CARA east of the Sammamish River. However, the small, scattered network is comprised of remnants of past geotechnical, contaminant and hydrologic investigations. The wells in the network are not situated to enable staff to monitor groundwater quality in the vicinity of the supply wells.

The purpose of this project is to develop a network of monitoring wells to track the movement of groundwater and contaminants within the CARA. Locations for 26 new monitoring wells have been identified in the areas surrounding the five City water supply wells on City properties and right-of-ways (ROWs). Wells will be designed to facilitate collection of groundwater elevation, aquifer characteristics, and groundwater chemistry data.

Information collected during well installation and from the completed well network will be managed in a database and displayed graphically using the City's GIS software. Information will be presented and evaluated to better understand the groundwater flow regime, groundwater interaction with surface water, track contaminant plumes, monitor cleanup efforts, and facilitate evaluation of the effectiveness of the Wellhead Protection Program's hazardous materials management processes. Analysis of the data will enable the City to make better policy and management decisions regarding pollution prevention and groundwater protection efforts.

## B. Proposed Project

The project includes locating, installing, developing, surveying, and sampling a series of 26 groundwater monitoring wells. The project objective will be met through completion of the following tasks:

- Review of information from surrounding groundwater supply and monitoring wells.
- Pre-installation field activities including utility location, permitting, access negotiations, and notifications.
- Preparation of a Monitoring Network Enhancement Work Plan and a Health and Safety Plan.
- Preparation of a Groundwater Sampling and Analysis Plan.
- Borehole advancement, soil sampling, and monitoring well installation.
- Dedicated monitoring equipment installation in select groundwater monitoring wells.
- Development, survey, and sampling of the newly installed groundwater monitoring wells.

- Repair, development, survey, and sampling of several existing monitoring wells.
- Proper disposal of all waste materials including water and soil cuttings.
- Preparation of a Monitoring Network Enhancement Report.
- Preparation of a Fall 2007 Groundwater Sampling Report.
- Preparation of a Spring 2008 Groundwater Sampling Report.

C. Consultant Selection

Nine consultants from the City's consultant roster were invited to submit proposals to perform the work. Proposals were received from five consultants, including: Golder Associates, Pacific Groundwater Group, Landau Associates, SCS Engineers, and GeoEngineers. These five proposals were evaluated by a team of three City staff. GeoEngineers was determined to be the most highly qualified. A scope of work has been negotiated and a fair and reasonable price determined.

The attached Consultant Agreement is a standard City agreement. It will be reviewed by the City Attorney and Risk Manager prior to signature by the Mayor.

IV. **IMPACT**

- A. Service/Delivery: This project will serve to better equip Wellhead Protection Program staff with the tools necessary to protect public health and the environment. Additionally, analysis of the data collected from the enhanced groundwater monitoring network will enable the City to make better policy and management decisions regarding groundwater protection.

B. Fiscal:

Project Costs

Consultant Agreement	\$301,281
Contingency	<u>30,128</u>
Total	\$331,409

Project Funding

Water/Wastewater CIP	\$245,913
Water/Wastewater Operations	<u>85,496</u>
Total	\$331,409

## V. ALTERNATIVES

### 1. Reject the Proposal:

The City could continue to rely upon the existing, small, scattered groundwater monitoring well network comprised of remnants of past geotechnical, contaminant and hydrologic investigations located primarily in the vicinity of water supply wells 4 and 5. This alternative would greatly limit the ability for wellhead protection staff to monitor groundwater quality in the vicinity of the supply wells, particularly water supply wells 1, 2, and 3.

### 2. Modify the Scope of Work:

The quantity and placement of the proposed wells were carefully designed to provide adequate coverage of the areas horizontally and vertically upgradient of the City's drinking water wells. Reducing the number of wells installed would lead to inadequate coverage.

## VI. TIME CONSTRAINTS

Council's approval will allow completion of 90% of this project by March 2008; the remaining 10% would be completed by September 2008. Once this effort is completed, wellhead protection staff will have a better understanding of the groundwater flow regime and groundwater/surface water interactions. Wellhead protection staff will have the ability to track contaminant plumes and monitor cleanup efforts. Additionally, the data gathered will facilitate evaluation of the effectiveness of the Wellhead Protection Program's hazardous materials management processes.

## VII. LIST OF ATTACHMENTS

- A. Proposed Well Location Map
- B. Consultant Agreement

\_\_\_\_\_  
Donald Cairns for  
William J. Campbell, Director of Public Works

\_\_\_\_\_  
9/24/07  
Date

Approved for Council Agenda \_\_\_\_\_  
/s/  
Rosemarie Ives, Mayor

\_\_\_\_\_  
9/24/07  
Date

**ATTACHMENT B**

# **CONSULTANT AGREEMENT**

PROJECT TITLE  Groundwater Monitoring Network Enhancement	WORK DESCRIPTION  The project includes locating, installing, developing, surveying, and sampling a series of groundwater monitoring wells.
PROJECT NO.	
REDMOND BUSINESS LICENSE NO.  RED00003229	CONSULTANT/ADDRESS/TELEPHONE  GeoEngineers, Inc. 8410 154th Avenue NE Redmond, WA 98052 425) 861-6000
FEDERAL I.D. NO.  91-6237984	
MAXIMUM AMOUNT PAYABLE  \$331, 409	COMPLETION DATE  August 31, 2008

**Index of Exhibits**

Exhibit "A" – Scope of Work  
Exhibit "B" – Payment (Negotiated Hourly Rate)  
Exhibit "C" – Consultant Fee Determination  
Exhibit "D" – Subcontracted Work/Fee Determination  
Exhibit "E" – Title VI Assurances

THIS AGREEMENT, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2007, between the City of Redmond, Washington, hereinafter called the "CITY", and the above organization hereinafter called the "CONSULTANT".

**WITNESSETH THAT:**

WHEREAS, the CITY desires to accomplish the above referenced project; and

WHEREAS, the CITY does not have sufficient staff to meet the required commitment and therefore deems it advisable and desirable to engage the assistance of a consultant to provide the necessary services for the PROJECT; and

WHEREAS, the CONSULTANT represents that he/she is in compliance with the Washington State Statutes relating to professional registration, if applicable, and has signified a willingness to furnish consulting services to the CITY.

NOW THEREFORE, in consideration of the terms, conditions, covenants and performance contained herein, or attached and incorporated and made a part hereof, the parties hereto agree as follows:

## **I GENERAL DESCRIPTION OF WORK**

The work under this AGREEMENT shall consist of the above described work and services as herein defined and necessary to accomplish the completed work for this PROJECT. The CONSULTANT shall furnish all services, labor and related equipment necessary to conduct and complete the work as designated elsewhere in this AGREEMENT.

## **II SCOPE OF WORK**

The Scope of Work and project level of effort for this project is detailed in Exhibit "A" attached hereto, and by this reference made a part of this AGREEMENT.

## **III GENERAL REQUIREMENTS**

All aspects of coordination of the work of this AGREEMENT, with outside agencies, groups or individuals shall receive advance approval by the CITY. Necessary contacts and meetings with agencies, groups or individuals shall be coordinated through the CITY. The CONSULTANT shall attend coordination, progress and presentation meetings with the CITY or such Federal, Community, State, City or County officials, groups or individuals as may be requested by the CITY. The CITY will provide the CONSULTANT sufficient notice prior to meetings requiring CONSULTANT participation.

The CONSULTANT shall prepare a monthly progress report, in a form approved by the CITY, that will outline in written and graphical form the various phases and the order of performance of the work in sufficient detail so that the progress of the work can easily be evaluated.

All reports, plans & specifications, and other data furnished to the CONSULTANT by the CITY shall be returned. All designs, drawings, specifications, documents, and other work products, including all electronic files, prepared by the CONSULTANT prior to completion or termination of this AGREEMENT are instruments of service for this PROJECT and are property of the CITY. Reuse by the CITY or by others acting through or on behalf of the CITY of any such instruments of service, not occurring as a part of this PROJECT, shall be without liability or legal exposure to the CONSULTANT.

#### **IV TIME FOR BEGINNING AND COMPLETION**

The CONSULTANT shall not begin any work under the terms of this AGREEMENT until authorized in writing by the CITY. All work under this AGREEMENT shall be completed by the date shown in the AGREEMENT under completion date.

The established completion time shall not be extended because of any delays attributable to the CONSULTANT, but may be extended by the CITY, in the event of a delay attributable to the CITY, or because of unavoidable delays beyond the control of the CONSULTANT.

#### **V PAYMENT PROVISIONS**

The CONSULTANT shall be paid by the CITY for completed work and services rendered under this AGREEMENT as provided in Exhibit "B" attached hereto, and by this reference made part of this AGREEMENT. Such payment shall be full compensation for work performed or services rendered and for all labor, materials, supplies, equipment, and incidentals necessary to complete the work specified in Section II, "Scope of Work". The CONSULTANT shall conform with all applicable portions of 48 CFR 31.

#### **VI SUBCONTRACTING**

The CITY permits subcontracts for those items of work as shown in Exhibit "D" attached hereto and by this reference made a part of this AGREEMENT.

Compensation for this subconsultant work shall be based on the cost factors shown in Exhibit "D".

The work of the subconsultant shall not exceed its maximum amount payable unless a prior written approval has been issued by the CITY.

All reimbursable hourly rates and direct non-salary costs for the subconsultant shall be substantiated in the same manner as outlined in Section V. All subcontracts exceeding \$10,000 in cost shall contain all applicable provisions of this AGREEMENT.

With respect to subconsultant payment, the CONSULTANT shall comply with all applicable sections of the Prompt Payment laws as set forth in RCW 39.04.250 and RCW 39.76.011.

The CONSULTANT shall not subcontract for the performance of any work under this AGREEMENT without prior written permission of the CITY. No permission for subcontracting shall create, between the CITY and subcontractor, any contract or any other relationship.

## **VII EMPLOYMENT**

The CONSULTANT warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT, to solicit or secure this contract, and that it has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of this contract. For breach or violation of this warrant, the CITY shall have the right to annul this AGREEMENT without liability, or in its discretion, to deduct from the AGREEMENT price or consideration or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift, or contingent fee.

Any and all employees of the CONSULTANT or other persons while engaged in the performance of any work or services required of the CONSULTANT under this AGREEMENT, shall be considered employees of the CONSULTANT only and not of the CITY, and any and all claims that may or might arise under any Workmen's Compensation Act on behalf of said employees or other persons while so engaged, and any and all claims made by a third party as a consequence of any act or omission on the part of the CONSULTANT's employees or other persons while so engaged on any of the work or services provided to be rendered herein, shall be the sole obligation and responsibility of the CONSULTANT.

The CONSULTANT shall not engage, on a full or part time basis, or other basis, during the period of the contract, any professional or technical personnel who are, or have been, at any time during the period of the contract, in the employ of the CITY, except regularly retired employees, without written consent of the public employer of such person.

## **VIII NONDISCRIMINATION**

During the performance of this contract, the CONSULTANT, for itself, its assignees, and successors in interest agrees to comply with the following laws and regulations:

Title VI of the Civil Rights Act of 1964  
(42 USC Chapter 21 Subchapter V Section 2000d through 2000d-4a)

Federal-aid Highway Act of 1973  
(23 USC Chapter 3 Section 324)

Rehabilitation Act of 1973  
(29 USC Chapter 16 Subchapter V Section 794)

Age Discrimination Act of 1975  
(42 USC Chapter 76 Section 6101 et. seq.)

Civil Rights Restoration Act of 1987  
(Public Law 100-259)

American with Disabilities Act of 1990  
(42 USC Chapter 126 section 12101 et. seq.)



49 CFR Part 21

23 CFR Part 200

RCW 49.60.180

In relation to Title VI of the Civil Rights Act of 1964, the CONSULTANT is bound by the provisions of Exhibit "E" attached hereto and by this reference made a part of this AGREEMENT, and shall include the attached Exhibit "E" in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto.

## **IX TERMINATION OF AGREEMENT**

The right is reserved by the CITY to terminate this AGREEMENT at any time upon ten (10) days written notice to the CONSULTANT.

In the event this AGREEMENT is terminated by the CITY other than for default on the part of the CONSULTANT, a final payment shall be made to the CONSULTANT for actual hours charged at the time of termination of the AGREEMENT plus any direct nonsalary costs incurred at the time of termination of the AGREEMENT.

No payment shall be made for any work completed after ten (10) days following receipt by the CONSULTANT of the Notice to Terminate. If the accumulated payment made to the CONSULTANT prior to Notice of Termination exceeds the total amount that would be due when computed as set forth herein above, then no final payment shall be due and the CONSULTANT shall immediately reimburse the CITY for any excess paid.

If the services of the CONSULTANT are terminated by the CITY for default on the part of the CONSULTANT, the above formula for payment shall not apply. In such an event, the amount to be paid shall be determined by the CITY with consideration given to the actual costs incurred by the CONSULTANT in performing the work to the date of termination, the amount of work originally required which was satisfactorily completed to date of termination, whether that work is in a form or a type which is usable to the CITY at the time of termination; the cost to the CITY of employing another firm to complete the work required and the time which may be required to do so, and other factors which affect the value to the CITY of the work performed at the time of termination.

Under no circumstances shall payment made under this subsection exceed the amount which would have been made using the formula set forth above.

If it is determined for any reason that the CONSULTANT was not in default or that the CONSULTANT's failure to perform is without the CONSULTANT'S or its employee's default or negligence, the termination shall be deemed to be a termination for the convenience of the CITY. In such an event, the CONSULTANT would be reimbursed for actual costs in accordance with the termination for other than default clauses listed previously.

In the event of the death of any member, partner or officer of the CONSULTANT or any of its supervisory personnel assigned to the project, or, dissolution of the partnership, termination of the corporation, or disaffiliation of the principally involved employee, the surviving members of the

CONSULTANT hereby agree to complete the work under the terms of the AGREEMENT, if requested to do so by the CITY. The subsection shall not be a bar to renegotiation of the AGREEMENT between the surviving members of the CONSULTANT and the CITY, if the CITY so chooses.

In the event of the death of any of the parties listed in the previous paragraph, should the surviving members of the CONSULTANT, with the CITY's concurrence, desire to terminate this AGREEMENT, payment shall be made as set forth in the second paragraph of this section.

Payment for any part of the work by the CITY shall not constitute a waiver by the CITY of any remedies of any type it may have against the CONSULTANT for any breach of the AGREEMENT by the CONSULTANT, or for failure of the CONSULTANT to perform work required of it by the CITY. Forbearance of any rights under the AGREEMENT will not constitute waiver of entitlement to exercise those rights with respect to any future act or omission by the CONSULTANT.

## **X CHANGES OF WORK**

The CONSULTANT shall make such changes and revisions in the complete work of this AGREEMENT as necessary to correct errors appearing therein when required to do so by the CITY, without additional compensation thereof. Should the CITY find it desirable for its own purposes to have previously satisfactorily completed work or parts thereof changed or revised, the CONSULTANT shall make such revisions as directed by the CITY. This work shall be considered as Extra Work and will be paid for as herein provided under Section XIV.

## **XI DISPUTES**

Any dispute concerning questions of fact in connection with the work not disposed of by AGREEMENT between the CONSULTANT and the CITY shall be referred for determination to the Director of Public Works or City Engineer, whose decision in the matter shall be final and binding on the parties of this AGREEMENT; provided however, that if an action is brought challenging the Director of Public Works or City Engineer's decision, that decision shall be subject to de novo judicial review.

## **XII VENUE, APPLICABLE LAW AND PERSONAL JURISDICTION**

In the event that either party deems it necessary to institute legal action or proceedings to enforce any right or obligation under this AGREEMENT, the parties hereto agree that any such action shall be initiated in the Superior court of the State of Washington, situated in King County. The parties hereto agree that all questions shall be resolved by application of Washington law and that the parties to such action shall have the right of appeal from such decisions of the Superior court in accordance with the law of the State of Washington. The CONSULTANT hereby consents to the personal jurisdiction of the Superior court of the State of Washington, situated in King County.

### **XIII LEGAL RELATIONS**

The CONSULTANT shall comply with all Federal, State, and local laws and ordinances applicable to the work to be done under this AGREEMENT. This AGREEMENT shall be interpreted and construed in accord with the laws of the State of Washington.

The CONSULTANT shall indemnify and hold the CITY and their officers and employees harmless from and shall process and defend at its own expense all claims, demands or suits at law or equity arising in whole or in part from the CONSULTANT's negligence or breach of any of its obligations under this AGREEMENT; provided that nothing herein shall require a CONSULTANT to indemnify the CITY against and hold harmless the CITY from claims, demands or suits based solely upon the conduct of the CITY, their agents, officers and employees and provided further that if the claims or suits are caused by or result from the concurrent negligence of (a) the CONSULTANT's agents or employees and (b) the CITY, their agents, officers and employees, this indemnity provision with respect to (1) claims or suits based upon such negligence, (2) the costs to the CITY of defending such claims and suits, etc. shall be valid and enforceable only to the extent of the CONSULTANT's negligence or the negligence of the CONSULTANT's agents or employees.

The CONSULTANT's relation to the CITY shall be at all times as an independent contractor.

The CONSULTANT shall comply with all applicable sections of the applicable Ethics laws, including RCW 42.23, which is the Code of Ethics for regulating contract interest by municipal officers. The CONSULTANT specifically assumes potential liability for actions brought by the CONSULTANT's own employees against the CITY and, solely for the purpose of this indemnification and defense, the CONSULTANT specifically waives any immunity under the state industrial insurance law, Title 51 RCW.

Unless otherwise specified in the AGREEMENT, the CITY shall be responsible for administration of construction contracts, if any, on the project. Subject to the processing of an acceptable, supplemental agreement, the CONSULTANT shall provide on-call assistance to the CITY during contract administration. By providing such assistance, the CONSULTANT shall assume no responsibility for: proper construction techniques, job site safety, or any construction contractor's failure to perform its work in accordance with the contract documents.

The CONSULTANT shall obtain and keep in force during the terms of the AGREEMENT, or as otherwise required, the following insurance with companies or through sources approved by the State Insurance Commissioner pursuant to Title 48 RCW.

#### **Insurance Coverage**

- A. Worker's compensation and employer's liability insurance as required by the State of Washington.
- B. Commercial general liability and property damage insurance in an amount not less than one million dollars (\$1,000,000) per occurrence/two million dollars (\$2,000,000) aggregate for bodily injury, including death and property damage.
- C. Professional liability insurance in the amount of \$1,000,000 or more against claims arising out of work provided for in this contract.

- D. Vehicle liability insurance for any automobile used in an amount not less than a one million dollar (\$1,000,000) combined single limit.

Excepting the Worker's Compensation and Professional Liability insurance secured by the CONSULTANT, the CITY will be named on all policies as an additional insured. The CONSULTANT shall furnish the CITY with verification of insurance and endorsements required by the AGREEMENT. The CITY reserves the right to require complete, certified copies of all required insurance policies at any time.

The additional insured endorsement shall provide that to the extent of the CONSULTANT's negligence, the CONSULTANT's insurance shall be primary and non-contributing as to the CITY, and any other insurance maintained by the City shall be excess and not contributing insurance with respect to the CONSULTANT's insurance.

All insurance shall be obtained from an insurance company authorized to do business in the State of Washington. The CONSULTANT shall submit a verification of insurance as outlined above within fourteen (14) days of the execution of this AGREEMENT to the CITY.

No cancellation of the foregoing policies shall be effective without thirty (30) days prior notice to the CITY.

The CITY will pay no progress payments under Section V until the CONSULTANT has fully complied with this section. This remedy is not exclusive; and the CITY may take such other action as is available to them under other provisions of this AGREEMENT, or otherwise in law.

#### **XIV EXTRA WORK**

The CITY may at any time, by written order, make changes within the general scope of the AGREEMENT in the services to be performed.

If any such change causes an increase or decrease in the estimated cost of, or the time required for, performance of any part of the work under this AGREEMENT, whether or not changed by the order, or otherwise affects any other terms and conditions of the AGREEMENT, the CITY shall make an equitable adjustment in the (1) maximum amount payable; (2) delivery or completion schedule, or both; and (3) other affected terms and shall modify the AGREEMENT accordingly.

The CONSULTANT must submit its "request for equitable adjustment" (hereafter referred to as claim) under this clause within thirty (30) days from the date of receipt of the written order. However, if the CITY decides that the facts justify it, the CITY may receive and act upon a claim submitted before final payment of the AGREEMENT.

Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the CONSULTANT from proceeding with the AGREEMENT as changed.

Notwithstanding the terms and conditions of the first two paragraphs above, the maximum amount payable for this AGREEMENT, shall not be increased or considered to be increased except by specific written supplement to this AGREEMENT.

**XV**  
**ENDORSEMENT OF PLANS**

If applicable, the CONSULTANT shall place its endorsement on all plans, estimates or any other engineering data furnished by them.

**XVI**  
**COMPLETE AGREEMENT**

This document and referenced attachments contains all covenants, stipulations and provisions agreed upon by the parties. No agent, or representative of either party has authority to make, and the parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein. No changes, amendments, or modifications of the terms hereof shall be valid unless reduced to writing and signed by the parties as an amendment to this AGREEMENT.

**XVI**  
**EXECUTION AND ACCEPTANCE**

This AGREEMENT may be simultaneously executed in several counterparts, each of which shall be deemed to be an original having identical legal effect. The CONSULTANT does hereby ratify and adopt all statements, representations, warranties, covenants, and agreements contained in the proposal, and the supporting materials submitted by the CONSULTANT, and does hereby accept the AGREEMENT and agrees to all of the terms and conditions thereof.

In witness whereof, the parties hereto have executed this AGREEMENT as of the day and year first above written.

*CONSULTANT*

*CITY OF REDMOND*

**By:** \_\_\_\_\_

**By:** \_\_\_\_\_  
Rosemarie Ives, Mayor

**Title:** \_\_\_\_\_

**ATTEST:** \_\_\_\_\_  
City Clerk

**APPROVED AS TO FORM:**

\_\_\_\_\_  
City Attorney

## **Exhibit A**

### **CITY OF REDMOND MONITORING NETWORK ENHANCEMENT & GROUNDWATER SAMPLING SCOPE OF WORK**

The Monitoring Network Enhancement and Groundwater Sampling Scope of Work that follows is divided into three Tasks:

1. Pre-Installation Activities: preparation for field work and deliverables.
2. Field Work: borehole advancement, soil sampling and analysis, groundwater monitoring well installation, groundwater monitoring well development, groundwater monitoring well survey, dedicated monitoring equipment installation, groundwater monitoring well sampling and analysis, and waste disposal.
3. Post-Installation Activities: deliverables.

A Project Schedule is included at the end of the Scope of Work.

#### **Task 1 Pre-Installation Activities**

##### **1.1 Preparation for Field Work**

Consultant team shall attend a project kick-off meeting at City Hall without delay following notice to proceed to review the project plan and determine how to best interact with the City on each phase of the project and to communicate progress, findings, recommendations and budget status. Consultant shall conduct a data review to confirm the effectiveness of the project as proposed, gain permission to access to each drilling site, obtain permits, and submit notifications.

- a. Review Tables 1-3, Figure 1, and data from existing water supply wells and groundwater monitoring wells in the immediate area of the proposed drilling sites. Confirm the effectiveness of the proposed groundwater monitoring well locations, screened intervals, and selections for grain-size analysis locations. Confirm the effectiveness of the selections for sampling existing groundwater monitoring wells.

Consideration should be given to well locations as they relate to surface water features, particularly the Sammamish River near water supply well 4. The City may, in the future, wish to conduct a groundwater/surface water interaction study and would like to have wells located appropriately.

The consultant will be expected to review boring log, well construction, and depth-to-water data for existing wells and water supply wells, analytical and field parameter data from the most recent round of groundwater monitoring at existing wells, and conduct a limited data review for groundwater information in the areas where there are no existing wells accessible to City staff (primarily the area surrounding water supply Well 3).

Well construction and depth-to-water data for approximately 35 existing wells has been consolidated and is available in hardcopy format. Boring logs, also in hardcopy format, are available for approximately 25 of the existing wells and all 5 of the water supply wells.

Analytical and field parameter data is available in Excel format. The City conducted the most recent round of groundwater sampling at approximately 20 existing wells in January 2007. The samples were analyzed for a combination of parameters including metals, cyanide, volatile organic compounds, semi-volatile organic compounds, and polynuclear aromatic compounds.

The field parameters that were recorded included temperature, pH, specific conductivity, and turbidity.

Suggested resources for your review include the Department of Ecology and King County. The City of Redmond does have copies of many investigation reports, and will be able to provide some assistance.

- b. Groundwater monitoring wells will be installed on City-owned properties and right-of-ways (ROWs). Access, utilities, and site use will be reviewed to determine compatible well locations at each drilling site. In some cases, the City has proposed well installation very near the boundary of our City-owned property with a neighboring privately-owned parcel. Utility location should be conducted within a radius sufficiently large to protect the health and safety of the personnel in the field.

Provide support to the City representative in coordinating access to properties and ROWs for groundwater monitoring well installation. The majority of the access negotiation will take place internally at the City. However, the City representative responsible for this project will need limited support from the consultant based on the following:

This project has been developed in the Natural Resources Division, but will encompass properties operated and maintained by Transportation, Utilities, the Parks and Recreation Department and the Fire Department who may have site specific requirements regarding access, construction, etc.

It is possible that the consultant may need to install wells on City-owned properties where Construction Division projects are being conducted.

Water Utility Division personnel will be conducting routine work at water supply wells (the City has proposed wells on two of the parcels where these wells are located).

- c. Obtain all relevant local, regional, state, or federal permits and submit all appropriate notifications for the field activities. Internal right-of-way use permits will need to be submitted to the Planning and Community Development Department. The Transportation Division will need to review traffic control plans for locations in City right-of-ways.

The City representative will be available to work with the consultant at each drilling site (on City property and in right-of-ways) to locate each new well in the most accessible location with the least amount of foot/vehicle traffic. If any given well must be installed in a location where traffic control will be required, the consultant will need to provide the control. Traffic control may include signage and routing for pedestrians and park users as well as vehicles.

## **1.2 Deliverables**

Consultant shall prepare the three Plans listed below in support of the activities listed in Task 1.

- a. Site specific Health and Safety Plan in accordance with OSHA 29 CFR 1910.120 to protect workers at the project sites during monitoring network enhancement and groundwater sampling (PDF format plus one hard copy).
- b. Monitoring Network Enhancement Work Plan for the City's approval (PDF format plus one hard copy of the final version). The Work Plan should include all of the information discussed

in this Scope of Work (with the exception of Task 2.8) including but not limited to: confirmed well locations, property ownership, access restrictions (if any), position of utilities, borehole advancement and soil analysis protocol, estimated well construction specifications (depth, screen size and interval, sand pack size and interval, distance from supply wells), well development and survey protocol, dedicated equipment installation, soil and waste water disposal, and reporting.

- c. Groundwater Sampling and Analysis Plan (SAP) for the City's approval (PDF and MS Word format plus one hard copy of the final version). The SAP will direct groundwater monitoring and laboratory analytical activities. The SAP should include, and elaborate on, all of the information discussed in Task 2.8 of this Scope of Work.

## **Task 2 Field Work**

### **2.1 Borehole Advancement**

Consultant shall contract with an environmental drilling contractor to advance approximately 26 boreholes in accordance with the approved Work Plan. Consultant will schedule drilling, and coordinate and oversee all drilling activities.

Each borehole location will be approved by the City representative prior to drill rig mobilization. If the City representative directs drilling at an alternate location after drilling has begun, the City will cover the costs for drilling and abandonment. The consultant will be responsible for covering these costs in cases where poor conditions are foreseeable (drill rig capabilities and/or equipment issues which leads to early termination of a boring, drilling is conducted at a location other than the approved location or where a utility has been marked, improper well construction techniques lead to a damaged PVC casing, for example). If there is any question, payment will be negotiated between the consultant and the City on a case by case basis.

Field work must comply with the City's Noise Ordinance (City of Redmond Community Development Guide: 20D.100 Noise Standards) and may be conducted between the hours of 07:00 and 19:00.

- a. Obtain approval of environmental drilling contractor selection with the City representative.
- b. Schedule drilling activities with the contractor and the City representative.
- c. The consultant is responsible for identifying drilling conditions and selecting the appropriate method and equipment.
- d. Definitive location of all onsite utilities is essential. Locate all utilities (including but not limited to: water, electric, natural gas, telephone, cable, fiber, sanitary and storm sewers), conduits, pipelines, underground tanks or potential hazardous materials sources in the vicinity of the drilling locations. Locate utilities both on and off site prior to any subsurface work. Air knife equipment shall be utilized at each location from ground surface to a sufficient depth below ground surface (bgs) to ensure that nearby utilities are not damaged during drilling.
- e. Wells may be installed in grassy areas, concrete or asphalt. Conduct coring of asphalt or concrete as necessary prior to scheduled drilling operations.
- f. Provide a Geologist to oversee borehole advancement and prepare boring logs and well construction diagrams. Log all borings based on cuttings and soil samples using the Unified Soil Classification System (USCS).



- g. All down-hole equipment is to be steam-cleaned prior to beginning each boring. In addition, all sampling tools are to be cleaned between each sampling interval. The City will provide access to one or more properties (including the Maintenance and Operations Center) for the purposes of setting up a temporary decontamination station, if necessary. Care must be taken to ensure that contaminated equipment does not release debris or contaminants in transport to any decontamination location. The drillers should anticipate providing a self-contained decontamination station, with the ability to transport fresh water if necessary.
- h. All borings not completed as wells shall be sealed from the base of the boring to 6 inches bgs with bentonite and/or cement grout in accordance with all applicable local, state (Chapter 173-160 WAC), and federal regulations.
- i. The City will require that each drilling site will be returned to its original condition. A photograph should be taken at each site prior to initiating site activities to document original condition and provide a standard for restoration. Clean/repair the concrete/pavement soiled or damaged by drilling. Patch with concrete or asphaltic concrete to match surrounding material and leave the site in a neat and orderly condition. Areas raised by drilling are to be returned to their original grade and finish. The City will require protection of lawns, landscaping and infrastructure and will require restoration of damage caused by the consultant or its subcontractors. Therefore, drive-over plywood or other material should be used where appropriate and any grassy areas that are damaged will need rehabilitation.

## **2.2 Soil Sampling and Analysis**

Consultant shall collect and analyze soil samples from the (approximately 26) boreholes in accordance with the approved Work Plan.

- a. Collect soil samples using a clean split-spoon sampler (Dames & Moore) at five-foot intervals (approximate depths of 3-5 feet, 8-10 feet, 13-15 feet, and so on). Whenever possible, a soil sample should be collected from the capillary fringe immediately above the groundwater table.
- b. Screen soil samples in the field for the presence of contaminants (petroleum hydrocarbons, volatile organics, etc.). Screening methods appropriate for the expected target compounds are to be used (photo or flame-ionization detector for volatile organic compounds; immunoassay, thin layer chromatography, Ensyst<sup>TM</sup> kit, sheen testing, etc. for diesel, motor oil and other semi or non-volatile compounds).
- c. One soil sample from each boring may be submitted for laboratory analysis. Samples to be analyzed are to be selected based on the results of the field screening.
- d. Review the list of proposed analyses and data from existing water supply wells and groundwater monitoring wells in the immediate area of the proposed drilling sites. Confirm the effectiveness of the proposed laboratory analytical parameters and methods.

Soil samples are to be analyzed for a suite of parameters appropriate to detect the potential contaminants at each given site (based on past site uses, for example). A detailed list should be provided in the approved Network Enhancement Work Plan with a caveat that field results may lead to analysis of additional analytes. Analytical results should be appropriate for characterization of soil for disposal.

List of proposed soil analyses:

Gasoline	NWTPH-G
Diesel and Oil	NWTPH-Dx
Volatile Organic Compounds	EPA 8260B
Total Metals	6010B\6020
Mercury	7471A
Total Organic Carbon (TOC)	9060

- e. Additionally, six samples should be collected from the screened interval of selected wells for grain-size analysis. The purpose of collecting these six samples is to obtain data that will be used to calculate hydraulic conductivity from evenly distributed locations throughout the CARA.
- f. The consultant shall name their laboratory(s) of choice and obtain approval to use the laboratory(s) from the City representative. All analyses (other than field screening) are to be performed by a state-certified laboratory in accordance with methods specified by state and/or local authorities. All laboratory analyses are to be conducted in a manner such that method detection limits are equal to or less than 50% of the lowest applicable regulatory action level for all the target analytes. The applicable regulations for soil are WAC 173-340 (The Model Toxics Control Act – Cleanup). Unrestricted land use cleanup standards will be most appropriate.

## 2.3 Groundwater Monitoring Well Installation

A groundwater monitoring well shall be installed in each successful borehole (approximately 26) in accordance with the approved Work Plan. Monitoring wells will be designed to provide accurate groundwater elevation data and allow for collection of representative groundwater samples.

- a. Groundwater monitoring wells will be named according to the City's naming convention, which will be provided to the consultant upon award of the contract.
- b. It is the contractor's responsibility to obtain permits and comply with all applicable regulations (Chapter 173-160 WAC), specifications, and variances (if any) for monitoring well construction.
- c. Complete borings as 2-inch diameter, schedule 40 PVC, groundwater monitoring wells.
- d. Most of the monitoring wells will be installed to monitor the shallow groundwater and will be 15 to 30 feet deep with screens extending from just below the water table for five feet. Three wells will be installed to monitor slightly deeper groundwater and will be approximately 40 feet deep with five-foot screens. Three wells will be installed to monitor the groundwater entering the screened intervals of the water supply wells. These monitoring wells will be 50 to 70 feet deep with screens ranging from 15 to 20 feet long.
- e. Screen slot and sand pack size should be suitable for the aquifer characteristics at each monitoring well location.
- f. Wherever possible, wells will be completed with a permanent, robust, stick-up monument. The WAC requires bollards for all wells with stick-up completions. However, there may be one or more locations in City parks where the City would like a variance filed to construct a stick-up monument without bollards. Locking caps and padlocks will be provided by the City, where necessary.

If necessary, wells may be completed so that they are flush with the ground surface (or only very slightly raised to prevent accumulation of storm water) so that they do not impede foot or vehicular traffic in a ROW. (It is estimated that approximately five of the 26 new groundwater monitoring well monuments will need to be flush-mounted.)

- g. Four monuments (three stick-up and one flush) for existing wells are in need of repair. Repair should be conducted in conjunction with new monitoring well installation. If repair is not possible, the wells should be properly abandoned in accordance with Chapter 173-160 WAC.

## **2.4 Groundwater Monitoring Well Development**

Consultant shall develop all newly installed wells along with four existing groundwater monitoring wells (two 2-inch and two 1-inch) in accordance with the approved Work Plan. Development will be accomplished by surging and pumping until turbidity stabilizes or equals 25 NTU or less. Development may take place minimum of 24 hours after well installation.

## **2.5 Slug Testing**

Consultant shall conduct a slug test at each of the wells selected for grain-size analysis to provide values of horizontal hydraulic conductivity of the aquifer based on induced groundwater flow at the wells. The data will be used to confirm the hydraulic conductivities estimated from the grain-size analysis. Slug testing procedures should be detailed in, and conducted in accordance with, the approved Work Plan.

## **2.6 Groundwater Monitoring Well Survey**

A licensed surveyor shall establish the elevation (to 0.01 ft) and horizontal position ( $\pm 1$  ft) of each newly installed monitoring well along with eighteen existing groundwater monitoring wells in accordance with the approved Work Plan. A notch (not to exceed  $\frac{1}{4}$ " ) will be made on the top, north rim of each well casing. Survey the top edge of the casing and ground surface elevation utilizing the following Survey Criteria:

- City of Redmond Vertical Control Datum, February 1990 - NGVD 1929
- Redmond City Horizontal Control Notebook, 1993 – State Plane Washington North, Survey Feet, NAD 83/91 Harn
- All record drawings need to be tied into two City of Redmond control monuments
- Text file with the X, Y, & Z coordinates that can be easily formatted into MS Excel
- AutoCAD 2004 or MicroStation 7 or 8 file

## **2.7 Dedicated Monitoring Equipment Installation**

Consultant shall install pressure transducers and dedicated bladder pumps in selected newly installed groundwater monitoring wells in accordance with the approved Work Plan.

- a. Prior to dedicated bladder pump installation, depth-to-bottom will be measured in each well where a dedicated bladder pump will be installed.
- b. A QED Well Wizard Groundwater Sampling Pump (Model P1150) with Teflon-lined polyethylene tubing will be installed in an estimated seven new groundwater monitoring wells and one existing, ideally located, 2-inch diameter well where depth-to water precludes year-round use of a peristaltic pump for sampling. Each pump should be complete with an intake

screen and discharge adapter. Each flush-mount groundwater monitoring well should have a sealing low-clearance cap. Each dedicated bladder pump should be installed so that the intake is at the center of the screened interval or, in the case of the wells screened to match the water supply wells, set at the same depth as the near-by water supply pump.

- c. Of the wells that will be sampled, a vented pressure transducer with data-logging capability will be installed in approximately 15 select wells (with stick-up monuments). The transducers should be installed immediately above the top of the dedicated bladder pump where applicable; the transducers should be installed near the bottom of the screened interval in wells without bladder pumps. The transducer will be used for measurement of groundwater elevation; should be suitable for long-term use, low-pressure ranges, and provide automatic compensation for barometric pressure and temperature changes. The transducer should be programmable, sensitive to incremental changes in water level elevation, and allow for direct reading of depth-to-water (without manual conversion from pressure or water column height). A hand-held device for ease of download should be provided to the City. Prior to purchasing the equipment, the consultant shall provide cut-sheets for their recommended model(s) to the City representative for approval.

## **2.8 Groundwater Monitoring Well Sampling and Analysis**

Consultant shall measure water levels, purge wells while monitoring field parameters, collect water samples, and have them analyzed in accordance with EPA protocol and the approved Groundwater Sampling and Analysis Plan. Monitoring may take place minimum of 24 hours after well development. One groundwater sample from each monitoring well will be analyzed. Analytical results from these samples should be appropriate for characterization of groundwater for disposal.

- a. A round of water level measurements will be completed prior to groundwater sampling in Fall 2007 and in Spring 2008. Depth-to-water will be measured (from the top of the PVC casing) at approximately 30 existing groundwater monitoring wells and all (approximately 26) newly installed wells. Depth-to-bottom will be measured in the same wells, except those where a dedicated bladder pump has been installed.

Well condition should be noted at each well during water level measurement. This task will be particularly important at the existing wells. Poor condition, along with a recommendation and cost estimate for repair or abandonment (for example), should be reported to the City upon completion of each round of water level measurements in an Well Condition Data Table (tabular/electronic format).

- b. The consultant should purchase new, use for monitoring purposes during the planned Fall and Spring events, and provide to the City upon completion of the Spring 2008 sampling event, all equipment necessary to sample the groundwater monitoring wells including:
  - QED MP10 MicroPurge Basics Controller;
  - peristaltic pump (model to be approved by the City representative);
  - 1,000 ft of ¼-inch outside diameter polyethylene tubing;
  - 50 ft of tubing (MasterFlex or similar) appropriate for use in the selected peristaltic pump;
  - two tubing cutters;
  - two tubing weights;

- QED MP20 MicroPurge Basics in-line Flow Cell (with probes for pH, specific conductivity, temperature, oxidation reduction potential, and dissolved oxygen);
  - HACH 2100P turbidity meter.
- c. Each newly installed groundwater monitoring well and the (approximately 10) ideally located existing wells will be purged and sampled in Fall 2007 and Spring 2008. This will be accomplished with the dedicated bladder pumps where they have been installed and a peristaltic pump where dedicated equipment is absent. The wells will be sampled using a low-flow technique (pumping rate of no more than 500ml/min) documented in the approved Sampling and Analysis Plan. Field parameters depth-to-water, temperature, dissolved oxygen, specific conductivity, oxidation reduction potential, pH, and turbidity will be monitored during well purge. The wells will be purged until field parameters have stabilized.
- d. Well condition should be noted at each well during monitoring activities. This task will be particularly important at the existing wells. Poor condition, along with a recommendation and cost estimate for redevelopment (for example), should be reported to the City upon completion of each round of sampling.
- e. One groundwater sample will be collected from each monitoring well. Review list of proposed analyses and data from existing water supply wells and groundwater monitoring wells in the immediate area of the proposed drilling sites. Confirm the effectiveness of the proposed laboratory analyses and methods.

Groundwater samples are to be analyzed for a suite of parameters appropriate to detect the potential contaminants at each given site (based on past site uses and proximity to known/potential nearby and up-gradient sources of hazardous materials contamination, for example). A detailed list should be provided in the approved Groundwater Sampling and Analysis Plan.

List of proposed groundwater analyses:

Total Metals	EPA 200.8
Sodium, Calcium, Potassium, Magnesium	EPA 200.6
Mercury	EPA 245.1
Volatile Organic Compounds (VOCs)	EPA 8260B/SIM
Fluoride, Chloride, Sulfate, Nitrate (as N)	EPA 300.0
Bicarbonate	SM 2320B
Total Dissolved Solids	SM 2540C
Cyanide	EPA 335.2 Mod

- f. Quality Assurance/Quality Control samples should be collected each monitoring event as follows: one field duplicate, one field blank, and one trip blank (to be analyzed for VOCs only). Additionally, extra volume should be collected from one well each event to analyze for matrix spike and matrix spike duplicate.
- g. All analyses (other than for field parameters) are to be performed by a state-certified laboratory in accordance with methods specified by state and/or local authorities. All laboratory analyses are to be conducted in a manner such that method detection limits are equal to or less than, 50% of the lowest applicable regulatory action level for all the target analytes. The applicable regulations for water quality are WAC 173-200 (Water Quality Standards for Ground Waters of the State of Washington) and WAC 246-290 (Public Water Supplies).

## **2.9 Waste Disposal**

The consultant is responsible for the timely removal of all waste materials generated during the project activities. Waste water and soil cuttings are to be properly disposed of in accordance with state and local regulations and the approved Work Plan within 30 days of the date of accumulation. Consultant shall arrange for additional laboratory profiling of waste if necessary, obtain any necessary permits, and arrange for transportation to the disposal facility(s).

- a. Provide all equipment, supplies, and labor to properly manage soil cuttings and waste water.
- b. Contain decontamination, development, and purge water in Department of Transportation (DOT) approved drums or larger totes. The space necessary for waste storage should be kept to a minimum; therefore, larger totes are preferred for any water that is assumed to meet standards for Decant Facility discharge.
- c. Contain soil cuttings either in DOT-approved drums, within DOT-approved lined “super-sacks”, or in a roll-off container. The space necessary for waste storage should be kept to a minimum; therefore, larger forms of waste storage are preferred for any soil that appears to be contaminant-free, based on field screening.
- d. All drums and super sacks (if any) should be properly labeled with the name of the generator, date of accumulation, site address, contents, boring or well number, and a contact phone number.
- e. At the end of each work day, all waste containers (for soil and water) should be transported to the City’s Maintenance and Operations Center (MOC) or other approved, centrally located facility. Waste storage should not interfere with operations at the designated facility; the location shall be approved in the field by the City representative.
- f. Prepare and maintain a log of all containers of waste generated during project activities on an inventory sheet. Provide the City representative with updated inventory information as accumulation and disposal of waste is completed.
- g. Dispose of all waste in accordance with applicable regulations and guidelines. Water from decontamination, development, and purging is not to be discharged to the ground or storm water system under any circumstances. If the water meets King County’s guidelines, it may be discharged into the Decant Facility at the MOC.
- h. The drilling sites shall be kept free from accumulations of excess construction materials and rubbish. At the completion of work at each site, all such waste material shall be removed from the sites.

## **Task 3 Post-Installation Activities**

### **3.1 Deliverables**

Consultant will prepare the three deliverables listed below. All work products are the property of the City of Redmond, are to be kept confidential, and are not to be released to any other party without written authorization from the City.

- a. Monitoring Network Enhancement Report for the City’s approval (PDF format plus one hard copy of the final version). The Report should describe all work performed and results obtained under this Scope of Work (with the exception of the results for Task 9: Groundwater Monitoring Well Sampling and Analysis). Presentation of the information collected shall be thoroughly detailed, accurate, explanatory and put into the context of the project’s purpose.

The Monitoring Network Enhancement Report should include, at a minimum, the following information:

- A figure of the project area including a depiction of the drilling sites in relation to surrounding local features.
  - A figure for each drilling site, drawn to scale, showing abandoned borings (if any) and completed groundwater monitoring well locations, appropriate site features, underground utilities, buildings, north arrow, scale bar, and property lines. Field-scaled maps will be sufficient for private underground utilities. The City will provide GIS coverage for property boundaries, buildings, and city-operated utilities.
  - Boring logs with field screening results and well construction details. Additionally, data is to be provided electronically in an EQuIS 5 compatible format (tabular format; provided by the City).
  - Laboratory reports for soil analysis, including quality assurance/quality control (QA/QC) and chain-of-custody documentation. The QA/QC data should be reviewed to determine data quality.
  - Tabular presentation of laboratory results of soil quality and grain-size analysis. Laboratory data is to be provided electronically in an EQuIS 5 compatible format (tabular format; provided by the City).
  - Calculated hydraulic conductivity at each of the (six) locations selected for grain-size analysis and slug testing.
  - Documentation of groundwater monitoring well development.
  - Tabular presentation of groundwater monitoring well survey data to be provided electronically in an EQuIS 5 compatible format (tabular format; provided by the City).
  - Documentation of soil and waste water disposal including waste inventory sheets and manifests (if any).
- b. Fall 2007 Groundwater Monitoring Report for the City's approval (PDF format plus one hard copy of the final version). The Report should describe all work performed and results obtained under Task 9 (Groundwater Monitoring Well Sampling and Analysis) for the Fall 2007 sampling event. Presentation of the information collected shall be thoroughly detailed, accurate, explanatory and put into the context of the project's purpose. The Fall 2007 Groundwater Monitoring Report should include, at a minimum, the following information:
- A figure of the project area including a depiction of the sampling sites in relation to surrounding local features.
  - Documentation of field activities: depth-to-water measurements, field parameter measurements during well purge, and sampling of the groundwater monitoring wells.
  - Laboratory reports for groundwater analysis, including QA/QC and chain-of-custody documentation. The QA/QC data should be reviewed to determine data quality.
  - Tabular presentation of groundwater elevation, groundwater field parameter, and groundwater analytical laboratory results. Data is to be provided electronically in an EQuIS 5 compatible format (tabular format; provided by the City).
- c. Spring 2008 Groundwater Monitoring Report for the City's approval. The Report should be consistent with the Fall 2007 Groundwater Monitoring Report (discussed in detail above).

## Project schedule

Task	Description	Due Dates
Submit Questions Regarding RFP (City to reply August 16)		August 15, 2007
Proposal Delivery (City to award project August 31)		August 24, 2007
Contract negotiation (and estimated time for City Council approval)		October 5, 2007
1.1	Preparation for Field Work	November 9, 2007
1.2	Pre-Installation Deliverables:	
	Health & Safety Plan and Monitoring Network Enhancement Work Plan	Draft: October 26, 2007 Final: November 2, 2007
	SAP (Groundwater Sampling and Analysis Plan)	Draft: 1 week prior to start of Task 2.7 Final: 1 week after Draft
2.1	Borehole Advancement	November 12-December 21, 2007  (Final SAP must be complete prior to commencing Task 2.7)
2.2	Soil Sampling and Analysis	
2.3	Groundwater Monitoring Well Installation	
2.4	Groundwater Monitoring Well Development	
2.5	Groundwater Monitoring Well Survey	
2.6	Dedicated Monitoring Equipment Installation	
2.7	Fall 2007 Monitoring Well Sampling	
2.7	Spring 2008 Monitoring Well Sampling	June 9-20, 2008
2.8	Waste Disposal	January 21, 2008
3.1	Post-Installation Deliverables:	
	Monitoring Network Enhancement Report and Fall 2007 Groundwater Monitoring Report	Draft: February 1, 2008 Final: February 8, 2008
	Spring 2008 Groundwater Monitoring Report	Draft: August 1, 2008 Final: August 8, 2008



**EXHIBIT B**  
**PAYMENT**  
**(NEGOTIATED HOURLY RATE)**

The CONSULTANT shall be paid by the CITY for completed work and services rendered under this AGREEMENT as provided hereinafter. Such payment shall be full compensation for work performed or services rendered and for all labor, materials, supplies, equipment, and incidentals necessary to complete the work. The CONSULTANT shall conform with all applicable portions of 48 CFR Part 31.

**1. Hourly Rates**

The CONSULTANT shall be paid by the CITY for work done, based upon the negotiated hourly rates shown in Exhibit "C" attached hereto and by this reference made part of the AGREEMENT. The rates listed shall be applicable for the first 12-month period and shall be subject to negotiation for the following 12-month period upon request of the CONSULTANT or the CITY. If negotiations are not conducted for the second or subsequent 12-month periods within 90 days after completion of the previous period, the rates listed in this AGREEMENT, or subsequent written authorization(s) from the CITY shall be utilized. The rates are inclusive of direct salaries, payroll additives, overhead, and fee. The CONSULTANT shall maintain support data to verify the hours billed on the AGREEMENT.

**2. Direct Non-Salary Costs**

Direct Non-Salary costs will be reimbursed at the actual cost to the CONSULTANT. These charges may include, but are not limited to the following items: travel, printing, long distance telephone, supplies, computer charges, and fees of subconsultants. Air or train travel will only be reimbursed to economy class levels unless otherwise approved by the CITY. The CONSULTANT shall comply with the rules and regulations regarding travel costs (excluding air, train, and rental car costs) in accordance with the CITY's Travel Rules and Procedures. However, air, train, and rental car costs shall be reimbursed in accordance with the 48 CFR Part 31.205-46 "Travel Costs". The billing for direct non-salary costs shall include an itemized listing of the charges directly identifiable with the PROJECT. The CONSULTANT shall maintain the original supporting documents in their office. Copies of the original supporting documents shall be supplied to the CITY upon request. All above charges must be necessary for the services provided under this AGREEMENT.

**3. Contingencies**

If the CITY desires the CONSULTANT to perform additional work beyond that already defined in the AGREEMENT, the Agreement Administrator may authorize additional funds for this purpose. Such authorization(s) shall be in writing and shall not exceed the amount shown in Exhibit "C". Any changes requiring additional costs in excess of the contingencies shall be made in accordance with Section XIV, "Extra Work".

**4. Maximum Amount Payable**

The maximum amount payable by the CITY to the CONSULTANT under this AGREEMENT shall not exceed the amount shown in the heading of this AGREEMENT. The maximum amount payable is comprised of the total amount authorized and the contingencies. The maximum amount payable does not include payment for extra work as stipulated in Section XIV, "Extra Work". No minimum amount payable is guaranteed under this AGREEMENT.

**5. Monthly Progress Payments**

Progress payments may be claimed on a monthly basis for all costs authorized in 1 and 2 above. The monthly invoices shall be supported by detailed statements for hours expended at the rates established in Exhibit "C", including names and classifications of all employees, and invoices for all direct nonsalary expenses. To provide

a means of verifying the invoiced salary costs for the consultant's employees, the agency may conduct employee interviews. These interviews may consist of recording the names, titles, salary rates, and present duties of those employees performing work on the project at the time of the interview.

#### **6. Final Payment**

Final payment of any balance due the CONSULTANT of the gross amount earned will be made promptly upon its verification by the CITY after the completion of the work under this AGREEMENT, contingent upon receipt of all PS&E, plans, maps, notes, reports, electronic data and other related documents which are required to be furnished under this AGREEMENT. Acceptance of such final payment by the CONSULTANT shall constitute a release of all claims for payment which the CONSULTANT may have against the CITY unless such claims are specifically reserved in writing and transmitted to the CITY by the CONSULTANT prior to its acceptance. Said final payment shall not, however, be a bar to any claims that the CITY may have against the CONSULTANT or to any remedies the CITY may pursue with respect to such claims.

The payment of any billing will not constitute agreements as to the appropriateness of any item and at the time of final audit, all required adjustments will be made and reflected in a final payment. In the event that such final audit reveals an overpayment to the CONSULTANT, the CONSULTANT will refund such overpayment to the CITY within thirty (30) days of notice of the overpayment. Such refund shall not constitute a waiver by the CONSULTANT or any claims relating to the validity of a finding by the CITY of overpayment.

#### **7. Inspection of Cost Records**

The CONSULTANT and their subconsultants shall keep available for inspection by representatives of the CITY, for a period of three (3) years after final payment, the cost records and accounts pertaining to this AGREEMENT and all items related to or bearing upon these records with the following exception: if any litigation, claim, or audit arising out of, in connection with, or related to this contract is initiated before the expiration of the three (3) year period, the cost records and accounts shall be retained until such litigation, claim, or audit involving the records is completed.

**EXHIBIT C****CONSULTANT FEE DETERMINATION****PROJECT:** Well Head Protection \_\_\_\_\_**NEGOTIATED HOURLY RATES:**Classification                      Hours x                      Rate       =                      Cost

Classification	Hours	Rate	Cost
Principal (Engineer/Hydrogeologist)	60	190	\$ 11,400
Associate	0	180	\$ -
Sr Engineer	90	170	\$ 15,300
GIS Analyst 2	0	160	\$ -
GIS Analyst 1	50	150	\$ 7,500
Project Geologist/Engineer	0	140	\$ -
Staff 3 (Hydrogeologist/Geologist)	360	130	\$ 46,800
Staff 2	40	120	\$ 4,800
Staff 1	0	110	\$ -
Senior Tech	90	100	\$ 9,000
Drafting	10	100	\$ 1,000
Data Entry Technician	0	85	\$ -
Word Processor	10	75	\$ 750
Project Assistant	6	75	\$ 450

**TOTAL = \$ 97,000****REIMBURSABLES:***"Itemized"*= \$ 5,080

Description	Unit Cost	Number of Units	Total
PID (per day)	\$ 150.00	15	\$ 2,250
Grain Size Analysis (per test)	\$ 80.00	6	\$ 480
Mileage (per mile)	\$ 0.485	516	\$ 250
Supplies (at cost)			\$ 1,000
Disposable Groundwater Sampling Equipment (per day)	\$ 100.00	11	\$ 1,100

**SUBCONSULTANT COSTS (See Exhibit D):** = \$ 199,201**TOTAL** = \$ 301,281**CONTINGENCIES:** = \$ 30,128**GRAND TOTAL:** = \$ 331,409

**EXHIBIT D**

**SUBCONTRACTED WORK**

The CITY permits subcontracts for the following portions of the work of the AGREEMENT:

<u>SUBCONSULTANT</u>	<u>WORK DESCRIPTION</u>	<u>AMOUNT</u>
Cascade Drilling	Air knife and monitoring well boring and installation	\$ 72,376
APS	Utility locate	\$ 2,000
OnSite Environmental	Soil and groundwater chemical analysis	\$ 45,240
Traffic Control Services	Traffic control	\$ 2,000
Dowl Engineering	Surveying	\$ 27,735
QED	Groundwater pump, controller and flow cell	\$ 15,100
GEM	Investigative waste disposal	\$ 7,500
InSitu, Inc.	Transducer equipment	\$ 24,250
Instrumentation NW	Groundwater sampling equipment (peristaltic pump, turbidity meter, tubing and tools)	\$ 3,000

TOTAL = \$ 199,201

## **EXHIBIT E**

### **TITLE VI ASSURANCES**

During the performance of this AGREEMENT, the CONSULTANT, for itself, its assignees and successors in interest agrees as follows:

1. **COMPLIANCE WITH REGULATIONS:** The CONSULTANT shall comply with the Regulations relative to non-discrimination in the same manner as in federally assisted programs of the CITY, Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of the AGREEMENT.
2. **NON-DISCRIMINATION:** The CONSULTANT, with regard to the work performed by it during the AGREEMENT, shall not discriminate on the grounds of race, color, sex, or national origin in the selection and retention of subconsultants, including procurement of materials and leases of equipment. The CONSULTANT shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the AGREEMENT covers a program set forth in Appendix B of the Regulations.
3. **SOLICITATIONS FOR SUBCONSULTANTS, INCLUDING PROCUREMENTS OF MATERIALS AND EQUIPMENT:** In all solicitations either by competitive bidding or negotiation made by the CONSULTANT for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subconsultant or supplier shall be notified by the CONSULTANT of the CONSULTANT's obligations under this AGREEMENT and the Regulations relative to non-discrimination on the grounds of race, color, sex, or national origin.
4. **INFORMATION AND REPORTS:** The CONSULTANT shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the CITY to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a CONSULTANT is in the exclusive possession of another who fails or refuses to furnish this information, the CONSULTANT shall so certify to the CITY, and shall set forth what efforts it has made to obtain the information.
5. **SANCTIONS FOR NON-COMPLIANCE:** In the event of the CONSULTANT's non-compliance with the non-discrimination provisions of this AGREEMENT, the CITY shall impose such sanctions as it may determine to be appropriate, including, but not limited to:
  - Withholding of payments to the CONSULTANT under the AGREEMENT until the CONSULTANT complies, and/or;
  - Cancellation, termination or suspension of the AGREEMENT, in whole or in part.
6. **INCORPORATION OF PROVISIONS:** The CONSULTANT shall include the provisions of paragraphs (1) through (5) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The CONSULTANT shall take such action with respect to any subconsultant or procurement as the CITY may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that, in the event a CONSULTANT becomes involved in, or is threatened with, litigation with a subconsultant or supplier as a result of such direction, the CONSULTANT may request the CITY to enter into such litigation to protect the interests of the CITY.